

Are routine preoperative hemostatic screening tests necessary in Japanese institutions?

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To the Editor:

Western guidelines do not recommend preoperative hemostatic screening tests in unselected patients for predicting the risk of hemorrhagic complications, though the evidence that these tests do not help avoid neurological complications associated with neuraxial blockade is scant [1, 2]. However, the clinical significance of these tests has not been evaluated in Japan. After internal review board (IRB) approval, we retrospectively examined the incidences of unexpected abnormal results of routine screening tests of the prothrombin time/international normalized ratio (PT/INR), activated partial thromboplastin time (aPTT), and platelet count at Hokkaido University Hospital and whether unexpected abnormal results were associated with perioperative hemorrhagic complications. Results of the routine hemostatic screening tests from patients scheduled for elective surgery other than cardiac surgery, thoracic aortic surgery, liver transplantation, and surgery with local anesthesia between 1 January 2010 and 31 December 2011 and their medical records were reviewed. There are specific abnormality criteria for which invasive procedures are not considered safe: platelet count $<100,000/\mu\text{l}$; PT/INR ≥ 1.5 ; aPTT ≥ 50 s (upper limit of normal ranges for aPTT in our institution is 41.5 s) [3, 4]. During the 2-year study period, 7,180 patients were scheduled for elective surgery.

Preoperative screening tests of coagulation and platelet counts were done in 6,727 and 7,055 patients, respectively, at our hospital. The incidences of abnormal PT/INR, aPTT and thrombocytopenia were 0.62 % [95 % confidential interval (CI) calculated using the exact Clopper–Pearson method 0.45–0.84), 2.13 % (95 % CI 1.79–2.50), and 1.37 % (95 % CI 1.12–1.67), respectively. There was only one case in which the operation was cancelled due to an abnormal hemostatic test. The patient had thrombocytopenia associated with known liver cirrhosis and had been scheduled for a lumbar spine fusion operation. The incidences of patients with prolonged PT/INR, aPTT, and thrombocytopenia without already-known risk factors accounting for abnormal tests, such as anticoagulant therapy, blood disease, and liver disease, were 0.00 % (95 % CI 0.00–0.05), 0.24 % (95 % CI 0.11–0.35), and 0.20 % (95 % CI 0.11–0.33), respectively. In one patient, an unexpected thrombocytopenia was diagnosed as pseudo-thrombocytopenia by further examination. The remaining 27 patients with unexpected abnormal aPTT ($n = 14$) or thrombocytopenia ($n = 13$) had neither additional diagnostic examinations nor prophylactic treatment. In three patients with unexpected abnormal results, neuraxial blockades were cancelled due to abnormal tests, whereas eight patients were given neuraxial blockade. There were no perioperative hemorrhagic complications associated with hemostatic disorder in these patients.

To summarize, we found that the incidence of unexpected abnormal results of routine hemostatic screening tests was very low at our institution, and the unexpected abnormal tests were not associated with hemorrhagic complications, including abnormal bleeding; these findings are consistent with reports from other countries [1, 2]. Our study has a potential weakness associated with its retrospective, observational, and single-center design. Therefore, further

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prospective study with a large, multicenter population is needed to determine whether preoperative routine hemostatic screening tests in unselected patients are truly necessary in Japan.

References

1. American Society of Anesthesiologists. Practice advisory for preanesthesia evaluation: an updated report by the American Society of Anesthesiologists Task Force on preanesthesia evaluation. *Anesthesiology*. 2012;116:522–38.
2. Chee YL, Crawford JC, Watson HG, Greaves M. Guidelines on the assessment of bleeding risk prior to surgery or invasive procedures. *Br J Haematol*. 2008;140:496–504.
3. Slaughter TF. Coagulation. In: Miller RD, editor. *Miller's Anesthesia*, vol 2. 7th ed. Philadelphia: Churchill Livingstone; 2010. p. 1767–79.
4. Wheeler AP, Rice TW. Coagulopathy in critically ill patients: part 2—soluble clotting factors and hemostatic testing. *Chest*. 2010;137:185–94.